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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,384	01/28/2004	Douglas C. Myers	10541-1824	3353
29074	7590	09/12/2006	EXAMINER	
VISTEON C/O BRINKS HOFER GILSON & LIONE PO BOX 10395 CHICAGO, IL 60610			BELLINGER, JASON R	
			ART UNIT	PAPER NUMBER
			3617	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/766,384	Applicant(s) MYERS ET AL.	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the detachable half shaft assembly being detached from the shaft bell", as set forth in claims 1 and 9; and the inboard and outboard interfaces having a "polygon interface", as set forth in claims 5-6 and 12-15, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 62 and 142. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 144, 148, 150, 158, 123, 160, 134, 154, 152, 133, 241, 242, 246, 244, 248, 250, 238, 233, 224, 252, 220, 254, 234, 260, 223, 230, 236, 258. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top

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margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: Reference characters "140", "141", "142", and "122" should be replaced with reference characters -240-, -241--, -242--, and -222--, respectively to correspond to the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1-6 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 9 are indefinite due to the fact that it is unclear how the "detachable half shaft" may be "Detached from the shaft bell"; given the fact that shaft bell and half shaft are shown as integral elements in the drawings.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Austin. As best understood, Figure 4 of Austin shows a detachable half shaft assembly 10 including a shaft bell 46 and a disc rotor 26. The detachable half shaft includes a preloaded bearing assembly having an inner surface formed through inboard and outboard ends. A detachable body 14 includes an inboard interface at an inboard end 72 and an outboard interface at an outboard end 76. The inboard interface is configured to connect to the shaft bell 46, while the outboard interface connects to the brake rotor 26. The detachable body 14 includes a bearing-receiving portion defined by a stepped boss (formed near the outboard end 76 of the body 14) and a roll-formed face (formed at the inboard end 72 of the body 14).

The inner surface of the preloaded bearing assembly is received on the bearing-receiving portion of the detachable body 14, with the stepped body and roll-formed face engaging the bearing assembly at the inboard 72 and outboard 76 ends to maintain the preload tension thereon when the detachable half shaft assembly 10 is detached from

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either the shaft bell 46 or the disc rotor 26. The bearing assembly includes an outer race 32 having an inner wall formed therethrough with inboard and outboard outer raceways formed thereon. An outboard inner race is disposed adjacent the outboard end 76 of the detachable body 14, and includes a first raceway formed thereon to cooperate with the outboard outer raceway to house bearings 55.

An inboard inner race 73 is disposed adjacent the inboard end 72 of the detachable body 14, and includes a second raceway formed thereon to cooperate with the inboard outer raceway to house bearings 56. The inboard inner raceway includes an inboard inner surface.

9. Claims 1-5, 9-12, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al.

The applied reference has a common assignee and common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As best understood, Figure 1 of Wang et al shows a detachable half shaft assembly 10 including a shaft bell 20 and a disc rotor 44. The detachable half shaft includes a preloaded bearing assembly 26 having an inner surface formed through

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inboard and outboard ends. A detachable body 12 includes an inboard interface 14 at an inboard end and an outboard interface at an outboard end 16. The inboard interface is configured to connect to the shaft bell 20, while the outboard interface connects to the brake rotor 44. The detachable body 12 includes a bearing-receiving portion defined by a stepped boss (formed at the outboard end 16 of the body 12) and a roll-formed face 42 (formed at the inboard end 14 of the body 12).

The inner surface of the preloaded bearing assembly 26 is received on the bearing-receiving portion of the detachable body 12, with the stepped body and roll-formed face 42 engaging the bearing assembly 26 at the inboard and outboard ends to maintain the preload tension thereon when the detachable half shaft assembly 10 is detached from either the shaft bell 20 or the disc rotor 44. The bearing assembly 26 includes an outer race having an inner wall 30 formed therethrough with inboard and outboard outer raceways formed thereon. An outboard inner race 38 is disposed adjacent the outboard end 16 of the detachable body 12, and includes a first raceway formed thereon to cooperate with the outboard outer raceway to house bearings 40.

An inboard inner race 36 is disposed adjacent the inboard end 14 of the detachable body 12, and includes a second raceway formed thereon to cooperate with the inboard outer raceway to house bearings 40. The inboard inner raceway includes an inboard inner surface. The inboard interface 14 of the detachable body 12 is a polygon interface (see Figure 8). The outboard interface of the detachable body 12 includes a polygon interface 50.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 5-6 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Austin in view of Kochsiek. Austin contains all of the limitations as set forth in paragraph 8 above, but does not show the inboard and outboard interfaces of the detachable body polygonal.

Kochsiek teaches the use of a detachable half shaft assembly 2 including a detachable body 1.6 having inboard and outboard interfaces formed as polygon interfaces (1.5 and 1.3, respectively). Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the inboard and outboard interfaces of Austin as polygonal interfaces, in order to prevent rotation of the interconnected elements with respect to each other (for example, polygonal interfaces would prevent rotation between the detachable shaft and both the disc rotor and shaft bell). This would reduce wear between the elements, thus reducing maintenance costs.

Austin as modified by Kochsiek does not disclose the polygon interfaces being 18-sided. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the polygon surfaces of Austin as modified by Kochsiek with a shape having as many sides as necessary, in order to provide an assembly that

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would not fail during use, dependent upon various design features (such as the loads imposed on the axle, yield strength of the shaft material, etc.).

12. Claims 6, 13, and 15 are rejected under 35 U.S.C. 103(a) as being obvious over Wang et al.

The applied reference has a common assignee and common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Wang et al contains all of the limitations as set forth in paragraph 9 above, but does not show the polygon interfaces being an 18-sided surface. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the

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polygon surfaces of Wang et al with a shape having as many sides as necessary, in order to provide an assembly that would not fail during use, dependent upon various design features (such as the loads imposed on the axle, yield strength of the shaft material, etc.).

Response to Arguments

13. Applicant's arguments with respect to claims 1-6 and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references are considered to show polygonal interfaces between various elements of a wheel hub assembly. For example, Welschof et al shows polygonal interfaces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason R Bellinger
Primary Examiner
Art Unit 3617



9/8/06